

rather specialized, account of the photocatalytic aspects of silver photography, and, as with other chapters in the book, the author concentrates on the molecular basis of the application. This is followed by a description of immobilized photosensitizers and photocatalysis (Julliard); although these topics do not strictly speaking fall under the title of the book, they are useful here and are not out of place. The final three chapters cover photochemical water splitting (Amouyal), organized media and photocatalysis (Rico-Lattes and Lattes) and photosynthesis (Mathis). The article on water splitting covers many aspects from relatively simple molecular to supramolecular systems, and gives a good account of the problems encountered and how they may be tackled. Homogeneous and heterogeneous media are well described, with micelles, microemulsions, surfactants and polymers all being covered. The final chapter, concerning photosynthesis, covers a variety of aspects of this important area but the size of this field of research means that anyone with a serious interest in the subject would be better directed to one of the specialist texts available. The book concludes with an adequate index.

The book is well produced with uniformly clear text and figures throughout. It is, inevitably, not without errors; for example, the structure of the important  $\text{Ru}(\text{bpy})_3^{2+}$  ion is drawn incorrectly on p. 225 and some of the structural formulae on p. 211 are rather confusing, but these are relatively minor mistakes in an otherwise excellent volume. A wide range of chemists will find at least one or two chapters of interest, and the book is a useful addition to the first in the series, *Surface Photochemistry*.

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#### **Advanced Applications of NMR to Organometallic Chemistry**

M. Gielen, R. Willem and B. Wrackmeyer (Eds)  
John Wiley, Chichester, 1996  
396 pages. £100  
ISBN 0471-959-38-3

This book is one of a series on physical organometallic chemistry intending to offer 'State of the art reviews of recent developments in methods and techniques applied to organometallic chemistry'. Some emphasis is given in the Preface to developments beyond the normal one-dimensional techniques and this is reflected in several of the chapters. Well-known techniques such as COSY and NOESY are not discussed in detail; this is a text on advanced applications.

The book is grouped into chapters dealing with particular topic areas. The first is concerned with new methodologies: Selective Excitation and Selective Detection in  $^{29}\text{Si}$  NMR (Kupce and Wrackmeyer), Two-dimensional  $^{13}\text{C}$ -Metal Nuclear Correlation (Berger *et al.*), Two-dimensional  $\text{H}$ - $^{119}\text{Sn}$  Proton Detect Correla-

tion Spectroscopy.... in Organotin Compounds (Kayser *et al.*), Indirect Nuclear  $^{119}\text{Sn}$ -X Spin-Spin Coupling (Wrackmeyer).

A second set of chapters is concerned with applications to solids and those under exceptional conditions: Solid-state NMR Applications in Organotin and Organolead Chemistry (Sebald), Solid-state NMR Investigations of Metal Carbonyl Complexes (Aime *et al.*), High-pressure NMR in Organometallic Chemistry (Frey *et al.*), Multinuclear NMR Spectroscopy in Supercritical Fluids (Waugh and Lawless).

The third general theme covers a fairly disparate series of 'hot topics' related to particular elements: High-resolution  $^6,^7\text{Li}$  NMR of Organolithium Compounds (Gunther), Metal NMR of Organo-vanadium, -niobium and -tantalum Compounds (Rehder and Rodewald), NMR of Metallic Nuclei in Clusters (Granger) and  $^{171}\text{Yb}$  NMR Spectroscopy (Keates and Lawless).

In my view the book is a pretty specialist work, making it likely that either you will really need it or you can get by without it. It is a useful addition to libraries but many groups would probably want to prioritize on simpler spectroscopic works first, e.g. for the general benefit of the graduate students. The coverage of the book cannot readily be assessed as complete, or otherwise. It is a useful but fairly eclectic compilation of aspects of this growing and important field: if the hot topics are in your area, you need it; otherwise you can take a more relaxed view.

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#### **Organolanthoid Chemistry: Synthesis, Structure, Catalysis**

W. A. Herrmann (ed.)  
Springer-Verlag, Heidelberg, 1996  
Topics in Current Chemistry, Vol. 179  
285 pages, £88.50  
ISBN 3-540-61009-X

This book is a timely addition to the literature of lanthanide chemistry and will be of interest to practising lanthanide chemists as well as to those venturing into the area for the first time. The use of the word 'organolanthoid' in the title is misleading as the scope of the book goes beyond compounds with lanthanide-carbon bonds: the topics covered include lanthanide amides and alkoxides as well as complexes with heteroallylic ligands.

The opening chapter is a concise introduction to the area, dealing with properties of the lanthanide ions, and kinetic and thermodynamic aspects (frequently ignored), as well as giving some general comments on ligand types. A short section on preparation of suitable lanthanide starting materials will be particularly useful for readers new to the field.

The chapter on lanthanide amides covers not only the